INCH-POUND

MIL-PRF-20/27F
21 June 2001
SUPERSEDING
MIL-PRF-20/27E
12 August 1986

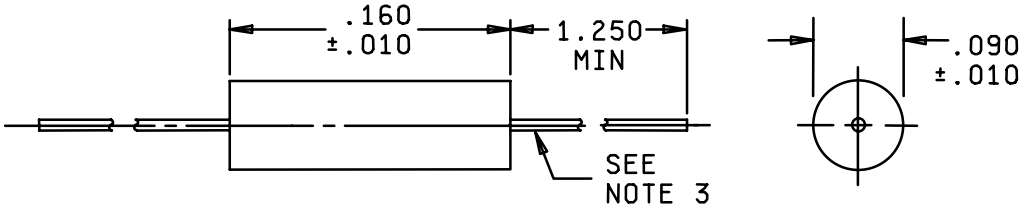
PERFORMANCE SPECIFICATION SHEET

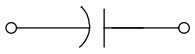
CAPACITORS, FIXED, CERAMIC DIELECTRIC (TEMPERATURE COMPENSATING), ESTABLISHED AND NON-ESTABLISHED RELIABILITY, STYLES CCR75 AND CC75

CC75 is inactive for new design after 6 June 1984. Use CCR75.

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the capacitors described herein shall consist of this specification and the latest issue of MIL-PRF-20.





CIRCUIT DIAGRAM

Inches	mm
.001	0.03
.005	0.13
.010	0.25
.016	0.41
.090	2.29
.160	4.06
1.250	31.75

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Lead diameter shall be .016 (0.41 mm) +.005, -.001 (+0.13, -0.03 mm).
4. Lead length may be a minimum of 1.00 inch (25.4 mm) long for use in tape and reel packaging, when specified in the ordering data.

FIGURE 1. Styles CCR75 and CC75 capacitors.

REQUIREMENTS:

Dimensions and configuration: See figure 1.

Lead type: Axial.

Case type: Tubular, molded.

DC rated voltage: See table I.

Operating temperature range: -55°C to +125°C.

Characteristic: See table I.

Failure rate level (CCR75 only): M (1.0 percent), P (0.1 percent), R (.01 percent) or S (.001 percent).

Thermal shock and voltage conditioning (CCR75 only): In accordance with MIL-PRF-20.

Capacitance: Within tolerance specified (see table I).

Dissipation factor: In accordance with MIL-PRF-20.

Dielectric withstanding voltage: In accordance with MIL-PRF-20.

Body insulation: Test II.

Solderability: In accordance with MIL-PRF-20.

Resistance to soldering heat: In accordance with MIL-PRF-20.

TABLE I. Capacitor characteristics.

Type designation 1/ 2/ 3/	Rated voltage (volts, dc)	Nominal capacitance (pF)	Capacitance tolerance	Type designation 1/ 2/ 3/	Rated voltage (volts, dc)	Nominal capacitance (pF)	Capacitance tolerance
CC-75CXR10--	200	0.10	B	CC-75CXR43--	200	0.43	B
CC-75CXR11--	200	0.11	B	CC-75CXR47--	200	0.47	B
CC-75CXR12--	200	0.12	B	CC-75CXR51--	200	0.51	B
CC-75CXR13--	200	0.13	B	CC-75CXR56--	200	0.56	B
CC-75CXR15--	200	0.15	B	CC-75CXR62--	200	0.62	B
CC-75CXR16--	200	0.16	B	CC-75CXR68--	200	0.68	B
CC-75CXR18--	200	0.18	B	CC-75CXR75--	200	0.75	B
CC-75CXR20--	200	0.20	B	CC-75CXR82--	200	0.82	B
CC-75CXR22--	200	0.22	B	CC-75CXR91--	200	0.91	B
CC-75CXR24--	200	0.24	B	CC-75CX1R0--	200	1.0	BC
CC-75CXR27--	200	0.27	B	CC-75CX1R1--	200	1.1	BC
CC-75CXR30--	200	0.30	B	CC-75CX1R2--	200	1.2	BC
CC-75CXR33--	200	0.33	B	CC-75CX1R3--	200	1.3	BC
CC-75CXR36--	200	0.36	B	CC-75CX1R5--	200	1.5	BC
CC-75CXR39--	200	0.39	B	CC-75CX1R6--	200	1.6	BC

See footnotes at end of table.

TABLE I. Capacitor characteristics - Continued.

Type designation 1/ 2/ 3/	Rated voltage (volts, dc)	Nominal capacitance (pF)	Capacitance tolerance	Type designation 1/ 2/	Rated voltage (volts, dc)	Nominal capacitance (pF)	Capacitance tolerance
CC-75CX1R8--	200	1.8	BC	CC-75CG390--	200	39	FGJ
CC-75CX2R0--	200	2.0	BC	CC-75CG430--	200	43	FGJ
CC-75CK2R2--	200	2.2	BC	CC-75CG470--	200	47	FGJ
CC-75CK2R4--	200	2.4	BC	CC-75CG510--	200	51	FGJ
CC-75CK2R7--	200	2.7	BCD	CC-75CG560--	200	56	FGJ
CC-75CK3R0--	200	3.0	BCD	CC-75CG620--	200	62	FGJ
CC-75CK3R3--	200	3.3	BCD	CC-75CG680--	200	68	FGJ
CC-75CK3R6--	200	3.6	BCD	CC-75CG750--	200	75	FGJ
CC-75CK3R9--	200	3.9	BCD	CC-75CG820--	100	82	FGJ
CC-75CJ4R3--	200	4.3	BCD	CC-75CG910--	100	91	FGJ
CC-75CJ4R7--	200	4.7	BCD	CC-75CG101--	100	100	FGJ
CC-75CJ5R1--	200	5.1	BCD	CC-75CG111--	100	110	FGJ
CC-75CJ5R6--	200	5.6	BCD	CC-75CG121--	100	120	FGJ
CC-75CJ6R2--	200	6.2	BCD	CC-75CG131--	100	130	FGJ
CC-75CJ6R8--	200	6.8	BCD	CC-75CG151--	100	150	FGJ
CC-75CJ7R5--	200	7.5	BCD	CC-75CG161--	100	160	FGJ
CC-75CH8R2--	200	8.2	BCD	CC-75CG181--	100	180	FGJ
CC-75CH9R1--	200	9.1	BCD	CC-75CG201--	100	200	FGJ
CC-75CH100--	200	10	FG	CC-75CG221--	100	220	FGJ
CC-75CH110--	200	11	FGJ	CC-75CG241--	100	240	FGJ
CC-75CH120--	200	12	FGJ	CC-75CG271--	50	270	FGJ
CC-75CH130--	200	13	FGJ	CC-75CG301--	50	300	FGJ
CC-75CH150--	200	15	FGJ	CC-75CG331--	50	330	FGJ
CC-75CH160--	200	16	FGJ	CC-75CG361--	50	360	FGJ
CC-75CH180--	200	18	FGJ	CC-75CG391--	50	390	FGJ
CC-75CG200--	200	20	FGJ	CC-75CG431--	50	430	FGJ
CC-75CG220--	200	22	FGJ	CC-75CG471--	50	470	FGJ
CC-75CG240--	200	24	FGJ	CC-75CG511--	50	510	FGJ
CC-75CG270--	200	27	FGJ	CC-75CG561--	50	560	FGJ
CC-75CG300--	200	30	FGJ	CC-75CG621--	50	620	FGJ
CC-75CG330--	200	33	FGJ	CC-75CG681--	50	680	FGJ
CC-75CG360--	200	36	FGJ				

1/ Complete type designation will include the following:
1st dash - Symbol “R” (for style CCR75) or dash will be deleted (for style CC75).
2nd dash - Applicable capacitance tolerance symbol.
3rd dash - Applicable failure rate level symbol (CCR75 only) or dash will be deleted (for style CC75).

2/ With respect to characteristics in previous revisions of this specification sheet: for capacitance values of 2 pF or less, characteristic CX is interchangeable with characteristics CG and CH; for capacitance values of 2.2 pF through 3.9 pF, characteristic CK is interchangeable with characteristic CH; for capacitance values of 4.3 pF through 7.5 pF, characteristic CJ is interchangeable with characteristic CH; and for capacitance values of 10 pF through 18 pF, characteristic CH is interchangeable with characteristic CG. These parts shall be stocked under the same applicable NSN’s.

* 3/ Temperature coefficient is not practically measurable for characteristic CX capacitors.

Temperature coefficient and capacitance drift: In accordance with MIL-PRF-20. For capacitors with values of 18 pF or less, the temperature coefficient tolerance shall be determined in accordance with table II.

Table II. Temperature coefficient tolerances.

Permissible capacitance change from capacitance at +25°C in ppm/°C					
Temperature	Characteristic				
	CX	CK	CJ	CH	CG
+125°C	1/	±250 ppm/°C	±120 ppm/°C	±60 ppm/°C	±30 ppm/°C
-55°C 2/	1/	+246.25 -326.25	+116.25 -166.25	+55.00 -91.25	+27.50 -53.75

1/ Not practically measurable.
2/ The ppm/°C values for -55°C were calculated by dividing ppm by negative 80°C.

Life: In accordance with MIL-PRF-20, operating condition 2.

Marking: Method I of MIL-STD-1285, as shown in the following example:

JCK - "J" brand (ER only) (J); and characteristic (CK).

2R2 - Capacitance value.

CM1 - Capacitance tolerance (C); FR level, CCR75 only (M); and year code (1 for 2001).

ATM - Lot code (A); and trademark (TM).

Changes from previous issue. The margins of this specification are marked with asterisks to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Custodians:
Army - CR
Navy - EC
Air Force - 11
DLA - CC

Review activities:
Navy - AS, MC, OS, SH

Preparing activity:
DLA - CC

(Project 5910-2116-01)